fluids readily, could not express himself intelligently, manifesting an almost complete suspension of the mental functions. Finally he died in a semicomatose state with slight elevation of temperature, accelerated pulse and respiration. The autopsy revealed a tumor of 2.5 cm. in its greatest diameter in the left temporal region. Its exact location was found to be in the posterior inferior part of the swollen midfrontal lobe, just anterior to the precentral fissure and 4.5 cm. above the beginning of the fissure of Sylvius. A second smaller tumor was found in the ascending frontal lobe, between the precentral fissure and the fissure of Rolando, measuring 8 mm. in diameter. Two similar nodules were found in the left lung, being composed of large cells imbedded in the meshes of a rather delicate connective tissue stroma, i. e., like that of carcinoma. The cells of large size and of epitheleoid character and protoplasm of delicate reticulated appearance. Two plates show the appearance of the superior surface of the brain and a vertical section through the site of the tumors.

McCorn.

LE NEVRAXE

(Vol. 4, 1902, No. 2.)

6. Case of Lesion of Cauda Equina. Contribution to Study of Centers of Micturition, Defecation, Erection and Ejaculation (concluded). A. Van Gehuchten.
7. Experimental Study on the Innervation of the Larynx of the Rabbit. F. de Beule.
8. Gemmules in the Nerve Cells. S. Soukhanoff.

6. *Cauda Equina Centers.*—Van Gehuchten completes his study begun in the last number of this journal. He presents a very full analysis of the work done in the centers of micturition, defecation, ejaculation, etc., and gives in great detail his results in a patient with a severe transverse lesion of the cauda. The paper is extensive, and his conclusions can be here given in fragments only. He believes with Müller that the primary centers of micturition, defecation, erection, and in part also of ejaculation are largely localized in the sympathetic ganglion of the hypogastric plexus. To these centers, however, should be superimposed those located in the conus. These, in their turn, are influenced by the superior centers of the cerebral cortex.

The sympathetic centers can functionate in a manner completely independent of the cerebrospinal centers. This probably takes place, for instance, in infants in the first months of life. Then the bladder and rectum empty themselves more or less regularly automatically at more or less regular intervals, and erection may take place. This also takes place in adults in lesions of the conus or of the inferior roots of the conus.

The medullary centers, however, exercise an influence over the sympathetic centers. Thus, in infancy, cold applied to the feet may induce a reflex micturition and similar skin reflexes in adults may stimulate vesical activity. The cortical influences are of the voluntary order and are acquired largely by the educative processes. In cord lesions their cutting off temporarily disarranges the bladder, rectal and other functions, but they may recuperate and come back to their primary functional activity.

7. *Innervation of the Muscles of the Larynx.*—F. de Beule gives a lengthy historical and experimental study on this subject, treating the subject under three main heads: (a) The distribution of the laryngeal nerves; (b) the part played respectively by the pneumogastric and the spinal accessory in the muscle innervation, and the character of their fibers; (c) the determination of the medullary center of the laryngeal nerves. So far as the muscular distribution of the laryngeal nerves is concerned de Beule favors Linget's views, holding that (1) Exner's views of a double nerve supply and from the nerves of both sides is not true; (2) Longet's view

is the correct one with the addition of the part played by the middle laryngeal nerve; (3) the crico-thyroid muscle is innervated by both the superior and middle laryngeal nerves; (4) all the other muscles are supplied by the recurrent laryngeal; this distribution is unilateral, save perhaps for the arytenoid muscle. Chapter II. of his research takes up the question of the motor fibers of the vagus and spinal accessory and the relative part played by each in the innervation. His conclusions reached after an elaborate argument, historical, physiological and pathological, are (1) that interrachidian tearing of the spinal accessory nerve is followed by Wallerian degeneration in the corresponding inferior laryngeal nerve only, and a limited number of its fibers at that, from which he concludes that the superior laryngeal and some fibers of the recurrent are derived from the pneumogastric; (2) isolated rupture of the bulbar roots of the pneumogastric is followed by immediate cessation of the respiratory movements of the corresponding vocal cord, and stimulation of the common trunk of the vagus, in these animals that had survived for a period of three weeks the intracranial rupture of the spinal accessory, gives rise to movements of the glottis. On the question of the bulbar centers de Beule claims that the dorsal vago-spinal accessory nucleus is the nucleus for the innervation of the larynx. The ganglionic centers for the motor fibers of the superior laryngeal nerves are in the lower two-thirds of the dorsal nucleus of the pneumogastric, in which region portions of the cells of origin of the recurrent laryngeal are also found. The spinal accessory is located in the upper three-fourths of the same nucleus.

8. *Gemmules.*—Soukhanoff continues his studies on gemmules, in one instance using the spinal cord of the guinea pig. He finds gemmules on some of the cell bodies of the spinal cord. In an old animal the gemmules were so numerous that they completely covered the cell outline between the dendrites. In newborn children he has found them, and in the posterior horns of an adult of fifty-two years. He holds that they are not artefacts, but contributes nothing new concerning their possible function.

JELLIFFE.

MISCELLANY.

A CASE OF TUMOR OF THE CAUDA EQUINA. Franz Volhard (Deutsche med. Wochenschrift, xxviii. 33, 1902).

The author reports a rare case, and one which is of importance for topical diagnosis. The patient, a male, and a teacher by occupation, observed early in the year 1898 that he was obliged to urinate more often and with more difficulty than usual, and that much more voluntary effort was required during defecation. In the same year a peculiar feeling of pressure manifested itself at the lower extremity of the spine, which persisted. In 1899 impotence occurred; in the summer the left foot began to waste as well as the leg, and the fatigue in the extremity caused the patient to limp. There never was any pain in the limb. The dull feeling of pressure above mentioned still persisted and became aggravated upon bending the body, coughing, climbing stairs, and upon pressure, although there was never a definite appreciation of pain. In 1900 the symptoms gradually increased. The left leg felt heavier, and the movements of the toes ceased. After treatment in one of the German watering places during 1901 the patient felt considerably better. He could walk much better, the bladder could be emptied with much more ease, and the impotence markedly decreased. This improved condition continued for almost three months until the end of the year 1901, when the symptoms again became aggravated. In addition to the previous symptoms the patient became greatly annoyed by an excessive thirst, dryness in the mouth and nose, loss of appetite and nausea. The feces became so dry that the patient often had to extract them with the fingers. Examination of the patient showed the following: Above the symphysis the bladder could be palpated as a